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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/551,735	09/29/2005	Guillermo J. Tearney	036217/US/2-475387-00191	6550
30873 7590 12/17/2007 DORSEY & WHITNEY LLP INTELLECTUAL PROPERTY DEPARTMENT 250 PARK AVENUE NEW YORK, NY 10177			EXAMINER TURNER, SAMUEL A	
			ART UNIT 2877	PAPER NUMBER
			MAIL DATE 12/17/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/551,735	Applicant(s) TEARNEY ET AL.	
	Examiner Samuel A. Turner	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,6-15,18-20,22-24 and 27-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,6-11,22-24 and 27 is/are allowed.
- 6) ☒ Claim(s) 4,12-15,18-20 and 28-35 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/21/07, 11/9/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement(s) (IDS) submitted on 21 May 2007 and 9 November 2007 have been considered by the Examiner in accordance with M.P.E.P. 609.05(b).

If applicant is aware of a document or section of a document that is highly relevant to patentability, the Examiner requests that applicant provide a concise explanation of why the English-language information is being submitted and how it is understood to be relevant. This request is made because of the large number of documents submitted, over 80 U.S. Patents, published applications, foreign applications, and literature articles; many of which are lengthy and complex, see MPEP 609.04(a).

M.P.E.P. 609.04(a)

Although a concise explanation of the relevance of the information is not required for English language information, applicants are encouraged to provide a concise explanation of why the English-language information is being submitted and how it is understood to be relevant. Concise explanations (especially those which point out the relevant pages and lines) are helpful to the Office, particularly where documents are lengthy and complex and applicant is aware of a section that is highly relevant to patentability or where a large number of documents are submitted and applicant is aware that one or more are highly relevant to patentability.

Drawings

The replacement drawing received on 24 September 2007 is accepted by the Examiner.

Response to Arguments

Applicant's arguments filed 24 September 2007 have been fully considered but they are not persuasive. Applicant's arguments with respect to claims 4, and 12-15, and 18-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

Applicant's amendment has overcome the objection of claims 10, 19, and 20 under 37 CFR 1.75(c).

Claim 22 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 1. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Claims 1 and 22 are identical except for the preamble. The scope of the actual patent protection is identical, both claims are directed to OCT probes, See the claimed equation with regard to Socr.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Applicant's amendment has overcome the rejection of claims 1, 8-11, and 22-24 under 35 U.S.C. § 112, second paragraph.

Claims 4, 12-20, 28-31, and 33-35 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 is dependent on canceled claim 3. For purposes of this action, claim 4 will be considered to depend from claim 1.

Claims 12 and 13 are indefinite because the claimed range cannot be determined. The court held that claims reciting "at least about" were invalid for indefiniteness as there was nothing to provide any indication as to what range of specific activity is covered by the phrase "at least about." *Amgen, Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991).

Claim 13 depends from itself. For purposes of this action, claim 13 will be considered to depend from claim 12.

Claim 14 is confusing because there is no connection between the at least two radiations and the claimed "at least one of" an optical section, a first section, and a second section. Claims 18-20 dependent from claim 14 and therefor are also included in the rejection.

Claim 28 depends from itself. For purposes of this action, claim 28 will be considered to depend from claim 27.

Claims 28-31 are confusing because there is no connection between the optical paths found in claim 27 and the claimed sections.

Claims 33-35 are confusing because there is no connection between the optical paths found in claim 32 and the claimed sections.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Applicant's amendment has overcome the rejection of claims 1, 4, 7-11, and 22-24 under 35 U.S.C. § 102(b) as being anticipated by either Knüttel(5,565,986), Li(6,014,214), or Waelti et al(WO 01/38820).

Claims 12 and 13 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Knüttel(5,565,986).

Knüttel teaches all the structural limitations of claims 12 and 13, see the rejection under 35 U.S.C. § 102(b) of claim 1 in the office action dated 23 May 2007. There is no specific range specified in Knüttel about the path delay. The range “at least about” will encompass all possible ranges including the range covered by Knüttel. Further, the claim only requires that the range be at least about 500 μm in air, not that the actual path delay of the claimed structure is in air.

Claims 12-14 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Li(6,014,214).

Li teaches all the structural limitations of claims 12-14, see the rejection under 35 U.S.C. § 102(b) of claim 1 in the office action dated 23 May 2007. There is no specific range specified in Li about the path delay. The range “at least about” will encompass all possible ranges including the range covered by Li. Further, the claim only requires that the range be at least about 500 μm in air, not that the actual path delay of the claimed structure is in air.

With regard to claim 14 the fibers of Li have silicon.

Claims 12, 13, and 32 are rejected under 35 U.S.C. § 102(b) as being clearly anticipated by Waelti et al(WO 01/38820), all references given below refer to the English translation U.S. 6,806,963).

Waelti et al teach all the structural limitations of claims 12 and 13, see the rejection under 35 U.S.C. § 102(b) of claim 1 in the office action dated 23 May 2007. There is no specific range specified in Waelti et al about the path delay. The range “at least about” will encompass all possible ranges including the range covered by Waelti et al. Further, the claim only requires that the range be at least about 500 μm in air, not that the actual path delay of the claimed structure is in air.

With regard to claim 32, Waelti et al teach an apparatus for obtaining information associated with a sample, comprising;

a first arrangement configured to separating at least one first electromagnetic radiation into a first radiation and a second radiation forwarded to a sample, wherein the first and second radiations having different path lengths(Fig. 7, 163);

a second arrangement configured to received third and fourth radiations from the sample associated with the first and second radiations and a fifth radiation received from a reference, and generate at least one interference information as a function of the third, fourth and fifth radiations(Fig. 7, 171-176); and

a third arrangement configured to generate data corresponding to an amount of a ranging depth within the sample associated with the second arrangement, wherein a difference between the path lengths of the first and second radiations is equal or greater than the ranging depth(Fig. 7, 175; where the ranging depth is equal to the path delay difference).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Applicant's arguments with respect to claims 14, 15, and 18-20, rejected under 35 U.S.C. § 103(a) as being unpatentable over Knüttel(5,565,986), have been considered and are not persuasive, see pages 22-24 of Applicant's remarks.

Response to Official Notice Traversal

Applicant's traverse of official notice filed 24 September 2007 is not adequate and the common knowledge or well-known in the art statement is taken to be admitted prior art.

Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known.

To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR 1.111(b).

With regard to claim 14, anti-reflection coatings are used in optics to prevent reflections at optical surfaces such as lenses or other bulk optics. Applicant has failed to show that anti-reflection coatings and there uses would not be considered well-known. By adding anti-reflection coatings to the optics of Knüttel, for the know function of preventing unwanted reflections which would cause noise in the detected signal, is using a combination of known elements and is obvious when it

does no more than yield predictable results, See *United States v. Adams*, 383 U.S.

39.

With regard to claims 15, 18-20, Applicant argues that there is no evidence in the record to provide an optical section with an index of at least 1.5. Applicant is directed to Snell's law: $n_1 \sin \theta_1 = n_2 \sin \theta_2$. This basic equation governs the angle of light entering and exiting media of differing refraction index. Shape and refraction index thus governs the focus of a lens. It is well within the scope of the skilled artisan to choose focusing optics having properties which will provide the desired focal lengths within a desired space. The application of basic laws of physics to solve known basic equations is the basis of engineering.

The question here, however, is not meeting the terms of the claims. The rejection is for obviousness of what is claimed, which involves consideration of the ordinary skill of the art. As for resulting in a useful device, appellants are talking about Esher's plug not being removable and being left in the conduit which, they say, "would prevent effective heat recovery." They are assuming that one of ordinary skill would not appreciate that Esher's hollow member 14 could be removed if it is not wanted, as insulation or otherwise, and that it would not be removed by a skilled worker who wished to allow heat recovery of the conduit in which it was placed. This argument presumes stupidity rather than skill. In re Sovish 226 USPQ 771.

Claims 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Waelti et al (WO 01/38820).

While Waelti et al fail to teach the specific index of refraction, material, or the use of anti-reflection coatings, these modifications would have been obvious to one of ordinary skill in the art at the time the invention was made. See the rejection of claims 14, 15, and 18-20 above.

Allowable Subject Matter

Claims 1, 6-11, 22-24, and 27 are allowed in view of the prior art of record.

Claims 4, and 28-31 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. § 112, second paragraph, set forth in this Office action.

With regard to claims 1, and 22-24; the prior art of record fails to teach the limitation of a processing arrangement for generating a first image with an improved signal-to-noise-ratio of SNR_{ACPE} in combination with the remaining limitations of either claims 1, 22, 23, or 24. Claims 4, and 6-11 are dependent from claim 1 and therefor also include the allowed subject matter.

With regard to claim 27, the prior art of record fails to teach the limitation of a third arrangement which generates "third data associated with the sample based on the first and second data that has a speckle pattern the amount of which is smaller than the amount of at least one of the first speckle pattern or the first speckle pattern" in combination with the remaining limitations found in claim 27. Claims 28-31 are dependent from claim 27 and therefor also include the allowed subject matter.

Action Made Final

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel A. Turner whose phone number is 571-272-2432.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr., can be reached on 571-272-2800 ext. 77.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Samuel A. Turner', is written over a horizontal line.

Samuel A. Turner
Primary Examiner
Art Unit 2877